



X-5000 MOBILE XRF

PERFORMANCE, POWER & FLEXIBILITY

Equipped with a secure closed-beam sample chamber, the X-5000 features safe and superior in-the-field Energy Dispersive X-ray Fluorescence (EDXRF) analysis. Combined with flexible software and a rugged body, the X-5000 is a powerful, portable laboratory.

Portable High Performance EDXRF for Critical on-the-go or in-the-lab Elemental Analysis Needs

- Exploration and production
- Pipeline and transmission
- Refining and marketing
- Drilling engineering equipment
- Catalyst feedstock contamination
- Engine and generator attrition
- Environmental sustainability
- Marine and aviation fuels

On-Site, In-Field Testing of S, P, Cl and 18 Metals in Energy & Fuel Related Materials

HORIBA continues to deliver advanced analytical solutions to fuel and energy industries. We've teamed up with Olympus Scientific Solutions to provide a high performance portable XRF analyzer optimized for key elements and metals like S, P, Fe, V, and Pb in an easy-to-use and safe configuration.

The X-5000 is a rugged, fully integrated closed beam XRF system. It combines the performance and power of traditional bench top EDXRF with simple industrial-grade touch screen operation for on-the-go testing. The X-5000 is ergonomically packaged, easy to carry and battery operated to provide critical answers where and when they are needed.

The X-5000 performs for upstream, midstream, downstream, oil field service and environmental sustainability applications. It enables analysis of crude and refined fuels, additives, and wear metal oils. It also facilitates screening for toxic metals in soils, sediment, sludge, runoff streams, and debris. It is a fast and flexible alternative solution to time and cost intensive traditional laboratory testing methods.



Key Applications

- ASTM D4294 Sulfur Analysis
- ASTM D6481 Unused Lubricating Oils Testing Ca, P, Zn, S, Mo, Mn
- Wear Metals Monitoring Fe, V, Pb, Cr, Cu, Sb, Sn, Mo, Ti, Ni, Cd
- Sulfur content at well drilling sites
- Mercury and Arsenic Contaminate Testing in Tank Bottom Sludge
- RCRA and Other Pollutant Metals Screening in Soils, sediments, and runoff streams

Elements can be analyzed from trace PPM to high percentage concentration levels. The X-5000 is preconfigured for optimized testing of phosphorous, sulfur, chlorine, calcium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, arsenic, selenium, molybdenum, cadmium, tin, antimony, mercury and lead in oils, liquids, and soils.



Energy Dispersive X-ray Fluorescence

The X-5000 integrates advanced 3-beam (kV-mA-filter) technology with a silver anode X-ray tube and large area Silicon Drift Detector (SDD). This powerful EDXRF combination is optimized to analyze 20+ elements in oils along with providing the highest possible sensitivity for sulfur. Analyzers are pre-calibrated with NIST standards in a clean mineral oil matrix without interfering elements.

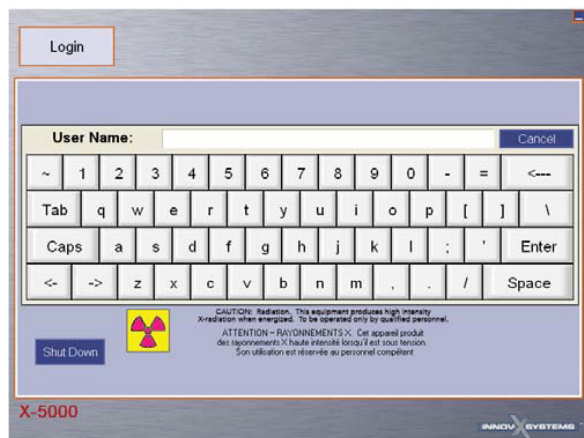
A sample guide/holder is attached to the X-5000 sample deck to accurately and securely place sample cups or bottles with a secondary spill containment for liquid samples. Users can analyze samples easily using default settings. Calibrations can be adjusted accordingly for applications that require custom standards for control over elemental correlation.

Use it around the work site, at the inspection station, on the production line, or on the lab bench. This self-contained, closed-beam unit provides the ultimate in user safety. The optional three-hour Li-ion battery pack provides true field use capability. Weighing only 20lbs, the X-5000 can go where it is needed.

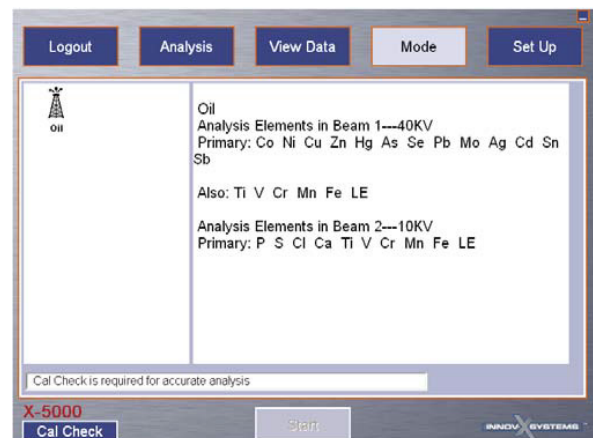


Onboard PC Operation

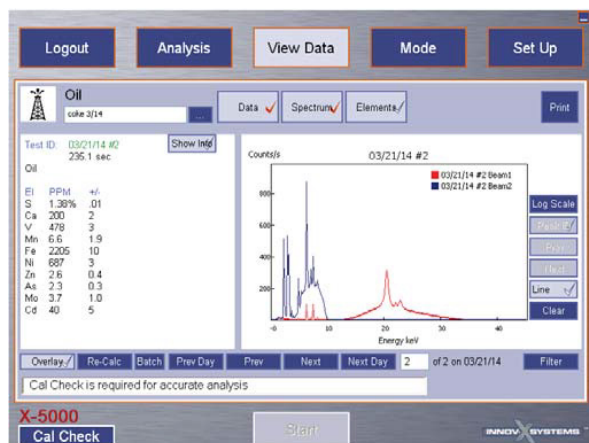
- The onboard PC controls full operation of the X-5000 in any analysis environment.
- Large display with virtual keyboard.
- Field-hardened color touch screen. 8.25" x 6.13" (20.9 cm x 15.9 cm)
- User-friendly data analysis interface.
 - Spectral overlay
 - Easy peak identification
 - Elemental concentrations with RSD



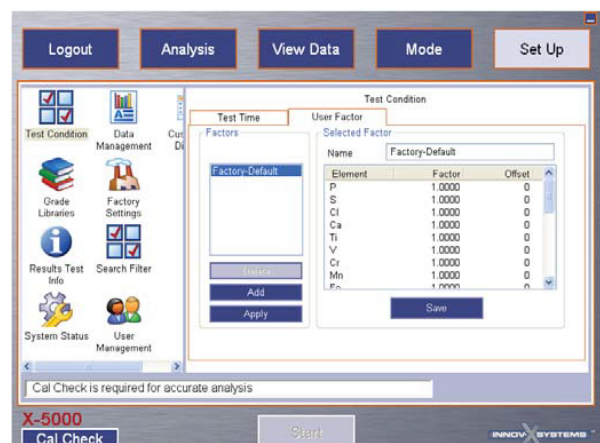
Virtual keyboard



Choose testing mode



Set up test conditions



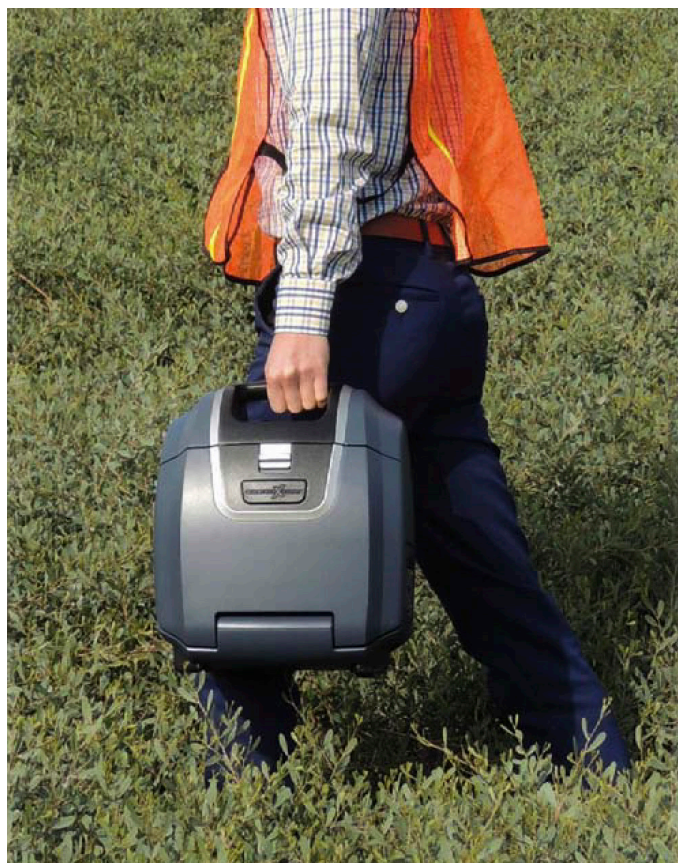
View Results

Detection Limits with a silver anode X-ray tube

X-5000 Specifications	
50kV, 200μA X-ray tube	
Silver anode X-ray tube optimized for oil, liquid, and soil applications	
High resolution Silicon Drift detector that delivers <165eV resolution (FWHM Mn K-alpha line) in a proven, field-rugged package	
Rugged, injection molded, sealed carrying case and sealed test platform	
Powerful Pentium® processor, embedded XP and sealed, field-hardened color touchscreen	
Multiple analysis modes, including Fundamental Parameters, Compton Normalization, Empirical Calibration models, Spectral Matching	
Six-position primary beam filters for optimal performance across the periodic table	
Sample platform with interlocked testing cover	
AC Power or an optional 3 hour lithium ion battery pack (typical duty cycles)	
Total weight: 20 lbs/9 kg	
Dimensions (approximate): 12" x 13" x 8" (30 x 33 x 20 cm)	
Sample chamber dimensions: 12" x 8" x 5" (30 x 20 x 12.5 cm)	

Element		LOD's
Arsenic	As	1
Antimony	Sb	27
Cadmium	Cd	17
Calcium	Ca	5
Chlorine	Cl	15
Chromium	Cr	2
Cobalt	Co	1
Copper	Cu	1
Iron	Fe	1
Lead	Pb	1
Manganese	Mn	1
Molybdenum	Mo	1
Mercury	Hg	1
Nickel	Ni	1
Phosphorus	P	30
Selenium	Se	1
Sulfur	S	7
Tin	Sn	24
Titanium	Ti	10
Vanadium	V	1
Zinc	Zn	1

- LOD's were found in a clean mineral oil matrix without interfering elements, with test times of 180's per beam.



Goes Where You Go

In the lab or on the work site, the X-5000 is portable enough and rugged enough for any environment.

Ready When You Are

Place your material on the window inside, close cover, and begin testing. No complicated preparation.

Results Within Seconds

The touchscreen displays results immediately, stores data in a tamper-proof format, and can optionally print results via USB connection.

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